START

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	Volume 1 GENERAL COMMENTS 1. The general order of the documents does not follow the March Environmental Protection Agency (EPA) guidance completely. (For example: 5.1.14.2, Task 13 Baseline Risk Assessment, is Task 6 in the guidance. 5.1.14.2, Task 14 Data Evaluation, is Task 5 in the guidance.) **HAZWRAP** 2. Sections 2.0 and 3.0 contain so much detail that the reader may be confused before he gets started. Clear introductory statements are needed to clarify the full picture. Are there any buildings? What does Area 600 look like? What is a crib? **HAZWRAP** 3. Because the various control plans are constrained to Phase 1, the title of the work plan and supporting control plans should also carry Phase 1. These plans will be modified and expanded over time; therefore, a more accurate document trail could be maintained if each major phase was referenced in the respective titles. **HAZWRAP** 4. There does not appear to be any consideration of the cultural resources of the Hanford Site as per the Antiquities Act. A survey of these resources should be included in planning of the 200-BP-1 OU RI/FS. **RL** 5. Page xi: List of acronyms, the definition of CERCLA should read: Comprehensive Environmental Response, Compensation and Liability Act, as amended. IT			

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	6. The Plates (2-2 and 2-3) were not legible in the review copy, more care will be necessary in the final copies. IT 7. Consideration is strongly recommended as part of Section 7.0, page 190-193 to add a list of DOE-RL Mandatory Requirements. RL 8. Page 1, Sec. 1.0, P. 2, last sentence: Add "identification" between "This" and "process". RL 9. Page 1, Sec. 1.1: Suggest changing WHC to the "remediation contractor". RL 10. Page 1, line 1: The date should be June 24, 1988. RL 11. Page 1, Section 1.1: If the "purpose of this plan is only to guide WHC" as stated, then where is the actual work plan that defines the specifics of what is to be done, who will do the: work, and how the work will all be integrated into a final product that meets regulatory requirements? HAZWRAP 12. Page 1, Sec. 1.1: The plan is actually a guide to DOE, not WHC. RL 13. Page 2: The map should be corrected in the vicinity of Midway, it should also have the Hanford Site Boundary labeled. RL,IT			

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	14. Page 3, Section 1.2: This section is titled so the reader expects an overview of the remedial investigation/feasibility study (RI/FS) process; however, it is not clear if this is the generic process or the one applicable to this operable unit. The last two paragraphs address 200-BP-1, while the other paragraphs seem to reflect the generic process. The purpose of this section should be confirmed and the overview worded accordingly. **HAZWRAP** 15. Page 3, Sec. 1.2, P. 1: After "CERCLA" add ..."through the tri-party agreement." **RL** 16. Page 3, Sec 1.2, P. 2, line 1: Change "CERCLA" to "Environmental Restoration". **RL** 17. Page 3: How was the decision to phase the FS into 3 parts arrived at? With the FS broken into pieces it seems to be extending the schedule much longer than need be. **IT** 18. Page 4, Fig 1-2: Remove one of the "to"s under the RI Objective. **RL**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	19. Page 4, Fig 1-2: Based on Chapt. 2 of the March 1988 guidance, this figure should be modified to include two additional items under the heading of SCOPING, namely: 1) Development of a site management strategy, and 2) Likely response scenarios. In addition, contaminant and location specific ARARs should be added under the "PHASE I" heading of the RI portion of the figure. **NUS** 20. Page 4: Scoping Box needs an additional bullet "Develop Site Management Strategy. **IT** 21. Page 4, Phase I: Operable Unit characterization needs two additional bullets, "Conduct Field Investigation" and "Define Remedial Action Goals." **IT** 22. Page 4: "To" box needs to be reordered in that during the ROD process, Remedy Selection comes before the preparation and approval of the ROD. Thus, selection of Remedy should be the first bullet. **IT** 23. Page 5, Section 1.3, P. 1: The second sentence should be changed to indicate that the work plan "will be" modified rather than "may be" modified. There is no doubt that the plan will be modified as the project progresses through the various phases. **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	24. Page 5, Sec. 1.3, P. 2: The development of a supplemental programmatic EIS is discussed in relation to satisfying the NEPA requirements for remedial activities resulting from this Work Plan. A brief discussion on the schedule and status of this NEPA document would help the reader understand the temporal relationship between the RI/FS and the supplemental programmatic EIS. **NUS,RL** 25. Page 5, Section 1.3, P. 1: The project organization does not appear to be sufficiently detailed to show the working-level project team. **HAZWRAP** 26. Page 5, Section 1.3: An Environmental Impact Statement (EIS) is mentioned. How will the EIS fit into the system? Where is the EIS schedule (not in Sect. 6)? Who is developing it? **HAZWRAP** 27. Page 6, Section 1.3, first sentence: "Manage and conduct" should be changed to "control," and "Project" should be added at the end. This change will signify that the key to project success is maintaining control of the various project functional elements. These plans reflect "what" will be controlled and "how" that control will be accomplished (procedures, policies, etc.). **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	28. Page 6, Section 1.3, P. 2: It is recommended that everything be deleted after the first sentence. The amount of detail is not needed for this section. In fact, the discussion is not complete because only the sampling an,d analysis, quality assurance (QA, and community relations plans are addressed. **HAZWRAP** 29. Page 7, Section 2.1.2: How many of the 149 S-S tanks are in 200-BP-1? The second paragraph addresses a singular tank, but Sect. 2.1.3 addresses multiple tanks. **HAZWRAP** 30. Page 7, Section 2.1.1: Fig. 2-2 is busy enough to be confusing. Placing the numbers outside the confined area might help. Further study within the documents reveals that wells were "E"-identified items. Plat 3-1 shows wells E-22 and E-23. Are these not included for a reason? The details of cribs (south of the fence) and wells in Fig. 2.2 of the area outside 200-BP-1 seem to be confusing. Further study inside the document revealed that the "flush tank" is the "241-BY Tank" or "Tank Farm." (Once again they are identified as multiple tanks in Sect. 2.1.3.) Is the rectangle surrounding the six cribs a concrete pad or something else? **HAZWRAP** 31. Section 2.1.1: Table 2-1 should include the tanks. **HAZWRAP**			

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	32. Page 7, Section 2.1.1, P. 2, last two sentences: These last two sentences refer to two different survey systems. The first is the Cadastral Land System, and the second refers to a survey system that is similar to the Universal Transverse Mercator system. The two systems are not directly compatible because they use different baselines for their origins. **HAZWRAP** 33. Page 7, Sec. 2.1.2, P. 2: A brief description of a "crib" would be helpful to a majority of readers. **IT** 34. Page 7, Sec 2.1.2, P. 2 and Fig.2-2: The 241-BY tank farm is called out on page 7 and should be shown and labeled on the figure. **RL** 35. Page 9: Map needs a legend describing solid circles, cross hatched circles, open circles and solid lines. **IT,RL,NUS** 36. Page 9: This figure and Plate 2-1 are not consistent, i.e., UN vs UPR. **RL** 37. Page 11, Sec. 2.1.3: The numbering system associated with tank farms, crib units and so on is very specific at Hanford. It would be better to include the entire alphanumeric name for specific waste disposal units. These alphanumeric codes should be included in a glossary. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	38. Page 11, Section 2.1.3: The IT tanks are addressed, but they are not shown anywhere. **HAZWRAP** 39. Page 11, Section 2.1.4: Tanks and lines do not appear to be included as part of the facilities. **HAZWRAP** 40. Section 2.1.4: Is "wetting front" a term that everyone understands? **HAZWRAP** 41. Page 11, Sec. 2.1.4.1, P. 2: This paragraph states that the accuracy of estimated quantities ... is unknown. The estimated quantities are not listed, where are they? **IT** 42. Page 12, Sec 2.1.4.2: Figure 2.2 shows specific locations for the unplanned releases, yet, this section indicates that the location of 2 of the 3 are unknown, and further states that UN 200-E-9 occurred in the 241BY Tank Farm (wherever that is) and not in the 200-BP-1 Operable Unit. What is the correct placement? If the releases are not in the OU, don't discuss them at all. **IT,RL** 43. Page 12, P. 1: The term "infiltration pathway" is used here and is commonly used at Hanford to describe subsurface water movement. "Infiltration" applies to the air-soil interface phenomenon and the term "percolation" is more appropriate in this usage. **RL**			

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	44. Page I2, P. 2: Clastic dikes are known to occur in the Hanford Formation, but it is doubtful if geologists would consider them "common". **RL** 45. Page 12, Section 2.1.5: The 600 Area is not defined on Plate 2-1 as implied. It does not appear to be shown anywhere. **HAZWRAP** 46. Page 13, Physical Setting: This section is totally devoid of any discussions of area Soils, Geology does not necessarily constitute soils. **IT** 47. Page 13, Section 2.2.2, first sentence: The use of the terms "geologic stratigraphy" together is redundant. It is suggested that "geologic" be eliminated. **HAZWRAP** 48. Page 16, Figure 2-5: Is there sufficient geologic data to construct a fence diagram? The figure shows many cross sections but subsequent figures only display 2, are the remainder of limited use? **RL,IT** 49. Pages 19-22: Suggest relabeling of cross sections to avoid confusion with cross sections identified on Fig 2-5. Avoid repeating A-A', B-B', C-C'. Also double check to verify all boring identifiers are the same on Fig 2-8 and the cross sections. For instance either put 699(?) and 299(?) identifier on Fig 2-8 or take them off of the cross sections. **IT**			

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	50. Page 22 and 26: The units of the isopleths used in these figures should be indicated in the legend. **NUS** 51. Page 24, Figure 2-12: What is the datum for the contours? **RL** 52. Page 26, Figure 2-13: What are the isopach units (feet I assume)? **RL** 53. Page 27, Sec. 2.2.3.1.1 Recharge: From the description, the reader has little concept of the relative importance of natural recharge vs. artificial recharge.The artificial recharge overwhelms the natural recharge in the study area and the changes in locations and amounts of pumping are having significant effects on the hydrologic system. Please expand this section. **RL** 54. Page 27: Artificial recharge can also occur from old, improperly abandoned wells which may have existed during the pre-Hanford times. Especially if the area was used for agricultural and grazing purposes (as indicated on Page 44). Has any historic search been conducted to ascertain the existence of any pre-Hanford site wells? Artificial recharge is also potentially possible from any well on site. Older monitor wells may not be constructed to standards required today. Any well could potentially act as a conduit if construction problems or grout failure occur(red)). **IT**			

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	55. Page 28, Figure 2-14: Although popular with the lay reader, the term "mean sea level (MSL)" for an elevation datum is technically incorrect. Most USGS topographic maps now show the referenced datum as the "National Geodetic Vertical Datum (NGVD) of 1929. **NUS**			
	56. Page 29, P. 1: "Groundwater mounds are evident ..... to a lesser degree below Gable Mountain Pond when active" may be taken by the reader as the pond is still active. Suggest putting the statement in the past tense. The same paragraph refers to a "stagnation zone" formed at the study area because of waste disposal practices. Changes in pond location and quantities have resulted in enhanced northward gradients as seen when comparing figures 2-14 and 2-15. Figure 2-14 has significantly more well data control in the 200-BP-1 area than does Figure 2-15. Could the differences in well data control account for any or all of the potentiometric surface interpretations? **RL**			
	57. Page 29, P. 1: It is indicated that groundwater flow from the unconfined aquifer beneath the Hanford Site is almost exclusively toward the Columbia River. Detailed geological sections across the river, showing River stage and heads in the unconfined and confined aquifers on both sides of the river could be used to support this important conclusion. Also, it is unclear if the only two alternatives to discharge to the Columbia River are downward leakage from beneath B-Pond and evaporation, or if there are additional discharge points that are not described. **NUS**			

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	58. Page 29, Sec 2.2.3.2.3: discusses the discharge of the confined aquifer. The text implies that there are two major discharge points for this aquifer, the columbia River and the unconfined aquifer. However, the evidence for concluding that this aquifer discharges to the river near Richland and to the unconfined aquifer in the northern portion of the site was not provided in the work plan. It is noted, not in the work plan, that a recent Westinghouse report (WHC-EP-0037, "Data Compilation: Iodine-129 in Hanford Groundwater," August, 1987) seems to suggest that detailed studies are required to delineate groundwater transport pathways within the confined aquifer. Figure 2-16, which shows no data points across the Yakima or Columbia Rivers, adds support for the need of additional groundwater flow information for the confined aquifer. **NUS** 59. Pages 30-31: The contour intervals on these two figures should be the same to permit ready comparison over time. **IT,NUS,RL** 60. Page 31, Figure 2-16: Add West Lake elevation. The Rattlesnake Ridge potentiometric surface contour of 410 ft. cuts across the area labeled as, basalt outcrop above water table. Does the Rattlesnake Ridge Fm. occur at that elevation at that location? A geologic cross-section from 53-50 to 42-40, including potentiometric surfaces, might be helpful if enough information is available to construct one. **RL**			

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	61. Page 32, Table 2-2: Hydraulic data of wells in the area would also be useful in addition to this table. **RL** 62. Page 34, P. 1: Extensive nitrate data for the Pasco Basin should be available through the Tacoma USGS office. They are presently performing a study of the basin in the areas north of Pasco and east of the Columbia River. **RL** 63. Page 34, Sec. 2.2.3.2, Confined Aquifer: This section should talk of confined aquifers, not confined aquifer, as these units are not hydraulically connected to any significant degree as evidenced by chemical differences. The public may be most interested in a discussion of those zones from which water is pumped from east of the Columbia River. What information do we have that would be appropriate for this section? **RL** 64. Page 34, Section 2.2.3.2.2, last sentence: Modify this sentence to indicate that the groundwater flow direction that is indicated in this paragraph is of the "confined" Rattlesnake Ridge Aquifer and not the water table aquifer. Although this information is given under the heading of "Confined Aquifers," Sect. 2.2.3.2, there is so much information on aquifer flow direction:s in this section, it would help to remind the reader that this is a confined flow direction. **HAZWRAP**			

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	65. Pages 34-36, Sec. 2.2.3.2, Confined Aquifer: The discussions in this section seem to be based on data and conclusions drawn from Graham,1981 and Gephart et al., 1979. There was a significant amount of data obtained for the confined aquifers, including the Rattlesnake Ridge and Saddle Mtns, by BWIP. This data seems to have been ignored. RL 66. In comparing nitrate, tritium, total beta and cyanide plumes as shown on Figures 3-2 through 3-5, all the plumes show a northward trend. However, the tritium plume exhibits a strong southeast component and a very severe break in the northward component where the 5,000 pCi/L contour stops. Is this a result of the choice of the minimum contour shown on the maps, differences in contaminant disposal histories, or can hydraulic and/or contaminant transport differences be inferred? RL 67. Page 44, Sec. 2.2.6.3: The first sentence should be rewritten, wetlands are not the only sensitive environment. RL 68. Page 44, Sec. 2.2.7.2: Does not define how the 200 Area is "further restricted." IT 69. Page 44, Sec. 2.2.7.2: The term "cultivated agriculture" is redundant. RL			

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	70. Page 45, Sec. 2.2.7.3.2: The text is confusing with respect to downgradient and upgradient. Also, it is unclear if there are any wells serving as sources of potable water downgradient of the OU. Based on Figure 2-17, much of the confined aquifer is downgradient of the OU. **NUS** 71. Page 45, 2nd to last sentence: should probably state "...13 kilometers (8 miles) to the southeast of ..." **NUS** 72. Page 46, Sec. 3.1.1.1: Is there any documentation of releases from the 241 BY Tank Farm? **RL** 73. Page 50: It is confusing to have one acronym for two things (ACL)? **IT** 74. Page 50, Sec. 3.1.3: The discussion on monitoring wells covers 33 wells, however, Table 3-3 presents the data for 41 wells. Why don't these values agree? Some listed wells are not shown on the appropriate figures. **IT,NUS** 75. Page 52, Section 3.1.3, P. 3, fourth sentence: Additional language should be added to emphasize that most of the numerous compounds analyzed for were below detection limits and were therefore not included in the list of major analytes. The reader should be given a sense of the extent of chemical analysis at the site and the criteria used to select the major analytes. **HAZWRAP**			

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	76. Page 53, Fig. 3-1: The symbol for cluster wells is essentially the same as that for confined aquifer wells and it is difficult to differentiate between the two. IT 77. Pages 54-82: There needs to be consistency among units: mg/L, ppm, ug/L, ppb, need to use a standard unit, either english or metric. RL 78. Page 54: Sodium is Na not No. RL 79. Page 56, Sec. 3.1.3.2: Tritium concentrations for the unconfined aquifer are shown, Well E-33-24 exhibits among the highest concentrations. Tritium in this well is several times that in neighboring well E33-5, although their Tc-99 concentrations are comparable. The RI should explain such lateral variations if they are important to remedial selection. Additionally, some wells near the Ou are identified as containing relatively h8igh concentrations of tritium, with B-Pond being the source via leakage to the confined aquifer. Well E33-12 is some 2 miles distant and the gradient in this area is about 0.0008 (obtained from Figure 2-16). Based on this information, a hydraulic conductivity of 6 ft/day (Table 2-4), and an estimated effective porosity of 0.1, the groundwater velocity from B-Pond to the OU is estimated to be on the order of 15 ft/year. Based on this estimate, it appears that sources other than B-Pond may have contributed the tritium now measured in well E33-12. NUS			

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	80. Page 62, Sec 3.1.3.16, line 4: Editorial, add "well" in front of "50-53". **RL** 81. Page 63, Sec. 3.1.4: The reader should be referred to Sec. 3.1.3, not 3.2.4. **NUS** 82. Page 65, Section 3.2: The reference cited (EPA, 1988c) is not on the reference list. **IT** 83. Section 3.2: Nowhere in this discussion are the impacts of the "Land Ban" restrictions considered. The waiver for Superfund generated waste expires on November 8, 1990. Since the FS isn't predicted to be completed until 1995 this is a very applicable, relevant, and appropriate requirement to start considering during the planning stages. **IT** 84. Page 66, Sec. 3.2.1, P. 4: DOE's current position is that DWS do not apply to the groundwater, but can be used for comparison. This stance should be reflected in the narrative. **RL** 85. Plate 3-1: The source is PNL not "unknown". **RL**			

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	86. Page 66, Sec. 3.2.1, P. 2: If not already performed, the discussion concerning sovereign immunity relative to ARARs should be reviewed to assure consistency with the consent order/compliance agreement being negotiated with the state and EPA. DOE's policy and position has been that the agency will meet substantive requirements of all applicable state laws, not the position that some laws are not applicable due to sovereign immunity. **NUS,RL** 87. Page 74, Section 3.2.1, Table 3-6, Identification of ARARs: If protection of aquatic life in potential surface water receptors is being considered as an environmental factor, the Clean Water Act Ambient Water Quality Criteria for protection of freshwater aquatic life may be relevant and appropriate. Therefore, these water quality criteria (acute/chronic) should be added to Table 3-6 for the listed chemicals. Also, if specific water quality standards exist for waters of the state of Washington (Ch. 173-201 WAC), these should be added to Table 3-6 because they are potentially appropriate requirements. **HAZWRAP** 88. Page 76, P. 1: The sentence reads: "Ground water affected by the site is not currently used for drinking water at the Hanford site and there is no evidence of off-site consumptions of the ground water affected by the operable unit." Does this mean the affected Aquifers are not being used for potable water off-site or contaminated ground water is not being consumed off-site?? The sentence needs to be clarified. The intent of the sentence should be clear. Regardless, if the aquifers are			

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	(88 cont.) potable off-site, even if it is not currently used, the MCLs would be relevant and appropriate because they would be a potential water supply (Class IIb). The non-existent (EPA, 1988c) reference is cited again. **IT** 89. Page 80, Sec 3.3.2.2, 1st Sentence: Please rewrite as it does not read well. **RL** 90. Page 81, P. 2, 1st sentence: What well is being referenced here? **RL** 91. Page 81, P. 4, line 8: Is WHO really WHC? **RL** 92. Page 82, Sec 3.3.3: This section indicates that site control will remain in effect for the "foreseeable future". As site control is essential for limiting risks, the institutional control period should be defined in years. As an objective of this section is to assess potential risks, threats to public health and the environment should be evaluated during two periods, namely during the period of institutional control and the period following that control. Careful consideration should be given to the land-use scenarios evaluated for the post-institutional control period. Thus, Fig. 3-6 may have to be modified to reflect conditions during this latter period. In addition, groundwater gradients will have to be estimated when groundwater mounding and leakage to the confined aquifer are modified by removal of cribs and ponds from service. **NUS**			

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	93. Page 84, Sec. 3.3.3.5: A heading appears to have been omitted after the first paragraph, as the discussion of Table 3-9 includes doses from sources other than air. **NUS**			
	94. Pages 84-86: Radiation exposure data of the maximum individual dose are presented in mrem (millirem). On page 87, comparable data are presented on Table 3-10 as person-rem. Based on the accompanying figure, it appears that the units for Table 3-10 are millirem. **NUS**			
	95. Page 86: The conclusion associating the calculated dose with N-reactor and PUREX Plant should be referenced. **NUS**			
	96. Page 86, P. 4, line 2: Editorial "form" should be "from". **RL**			
	97. Page 93, Table 3-14: The terms "2E-N, 2E-NE, 2E-2 and 2E-3" are confusing and not readily found.			
	98. We presume that 3.0E+2 means 3.0×10^2. **RL**			
	99. Page 94, Sec 3.3.4.3, P. 1: The "Unity Rule" should be defined in the text. **RL**			

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	100. Page 96, Section 3.3.5: Because Sect. 11 is so long, it would be helpful if this conclusion section was placed in the front of the section rather than at the end. As One reads through this section, one wonders what does all this mean all terms of risk/threat to people and the environment. **HAZWRAP** 101. Page 96, Section 3.4: This discussion seems out of place. It is recommended that it be rolled into Sec. 5.5, "Detailed Analysis of Alternatives" or identified as a separate major Sect. 4.0 following Sect. 3.0. **HAZWRAP** 102. Page 97, Section 3.4.1, first sentence: If in the preliminary risk assessment portion of the Work Plan it specifies that sulfates, phosphates, and sodium are not going to be considered in the final risk assessment, why are they included as a preliminary remedial action objective? In addition, selenium contamination lies beyond the confines of the site and is reported in a previous section of the text to be the result of another source. Why is it included in this investigation unless it has been reported as a contaminant on-site? **HAZWRAP** 103. Page 98, Table 3-16: The containment alternatives may be considered for comparison purposes only, as containment actions do not meet the intent of SARA. **IT** 104. Page 99: "Containment Actions" for air, not all chemical constituents can be volatilized--rewrite. **RL**			

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	105. Page 100 Table 3-17 Soil Under landfill, the repercussions of the Land Ban need to be considered. Incineration is not listed as a technology. **IT** 106. Page 101, Chemical precipitation: FaSO4 should be FeSO4 **NUS** 107. Page 101 Table 3-17 Ground Water Bioreclamation is not listed as a technology. **IT** 108. Page 103 Table 3-18: The Land Ban restrictions need to be considered as well as the new proposed revision to the NCP, 40 CFR part 300, which is proposed to be amended by adding a new Section 300.440. This new section deals with offsite disposal of CERCLA site waste (response and remedial action). **IT** 109. Section 4.0, general comment: Section 4.0 is entitled Work Plan Rationale. In addition to defining the location of samples and the rationale behind the sampling effort, you should specify the sequence or approach that the field investigation is going to take, which is a part of the "rationale" for the field investigation. Case in point: From Sect. 4.0 to Sect. 4.2.3.2 you specify the various areas of the investigation and how you are going to sample within these areas. Section 4.2.3.2 specifies that the actual locations of the wells are unknown downgradient of Well 50-53 but that they will be determined by a seismic refraction survey. This is the first place in the document where a seismic refraction survey is mentioned. In (109			

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	cont.) reality, will not the seismic refraction survey be accomplished as one of the first field tasks and will not the results of one aspect of the field effort feed the next phase of the fieldwork? If true, then the general approach you should take with a discussion within this section should be to arrange the section to show a logical, integrated, sequenced field approach. **HAZWRAP** 110. Page 105, Section 4: The discussion on Data Quality Objectives is incomplete. The discussion of the analytical levels is a good start, but it only implicitly addresses precision and accuracy. Also involved are representativeness, completeness, and comparability. **HAZWRAP** 111. Page 106, Table 4-1: Level I - Field Screening should be included for all site characterizations as meters/survey instruments will be used for both data needs and health assessments (worker HASP). Level I should be included for source and groundwater media. **IT** 112. Page 106, Section 4.1, Table 4-1: In general, DQO Level IV data are not needed for site characterization or for evaluation of alternatives. At best, this information can be DQO Level II or III. The only time DQO Level IV data are needed is for the final Risk Assessment. **HAZWRAP** 113. Page 106, Site Characterization: The analytical levels listed should be consistent with the text on page 105. **NUS**			

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	114. Under source, there is one too many "III IV" under the Appropriate Analytical Levels column. **HAZWRAP** 115. Under "hydrogeology," within the Data Use column, groundwater and velocity seem to be out of position, that is, they belong in "data need" column. **HAZWRAP** 116. TCL list parameters should be included in the groundwater and vadose zone area for chemicals to be analyzed. **HAZWRAP** 117. Sulfates should be excluded as analytes of concern if they are not going to be used as a part of the risk assessment. **HAZWRAP** 118. Page 115, Section 4.1.2.1, Surface and Near Surface Soil: Sampling and analysis of surface and near surface soils outside the operable unit have not been included in the work plan. As stated in Sect. 3.3.3.1, Surface Runoff, contaminated surface runoff may contaminate adjacent surface soils. While contamination of groundwater from surface water is considered improbable, soil sampling and analysis specifically in the area around well 50-53 may prove useful in explaining the high concentrations of constituents in the groundwater at well 50-53. **HAZWRAP**			

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	119. Page 115, Section 4.1.2.2, P. 2: Lateral spreading of contaminants as a result of perched conditions in the vadose zone may be valid, but it sounds like it could be an extremely expensive and time consuming field task. In light of this type of condition, it is best to keep in mind that the potential remediation of any contaminant in the vadose zone deeper that 20 ft from the surface rests on a very few possible alternatives. And if perched conditions do exist, how continuous are they and does this need to be a main focus for the field effort? For example, if you are talking about perched conditions that may only extend for 10 to 20 ft, preparing plans for this definition seems inappropriate. If the perched conditions extend 100 ft and this zone is within 20 ft of the surface, then additional definition may be warranted. But at depths greater than 20 ft, horizontal definition still seems inappropriate based on the possible remedial alternatives that could apply, the potential cost of such a field task, and the use of the data at the conclusion of the task. **HAZWRAP** 120. Page 115, Section 4.1.2.2, P. 3, last sentence: DQO Level V is special analytical service. DQO Level V analysis is generally required under two conditions: (1) there may be an ARAR that requires an unusually low detection limit for a particular analyte, compound, or matrix and (2) there may be an analyte that is not part of the TCL list, for example, nitrates. All of these conditions are usually known ahead of time during the work plan formulation stage, and there is rarely a time where a DQO level will be specified in the field or as a result of some other field activity. Therefore, it is not necessary to preface this condition in the work plan. In the field if this situation were to exist, it would fall under the "Field Change Request" heading. **HAZWRAP**			

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	121. Pages 116-117, Sec. 4.1.3, Groundwater: This section inadequately addresses the need for site-specific geologic and hydraulic information required to characterize the site. (Found later in 4.1.7.2; 4.1.3 should cross-reference 4.1.7.2.). **RL,IT** 122. Page 117 Section 4.1.6 Biota: What about deer? Aren't they a potential receptor and link to humans via the food chain? **IT** 123. Page 118, Section 4.1.7.1, P. 3, last sentence: It is suggested that total organic carbon and cation exchange capacity be included as possible soil parameters. **HAZWRAP** 124. Page 118, Section 4.1.7.1, P. 2, last sentence: Any physical or chemical parameter determined in the laboratory from a quasidisturbed sample from the field ,could not be considered to be DQO Level IV data. Data Quality Objectives not only apply to the analytical methodology, detection limit, and degree of validation but also to sampling methodology and the end use of the data. Leach test data could not be construed to be DQO Level IV, but they could be construed as Level III, perhaps. **HAZWRAP** 125. Page 118, Sec. 4.1.7.2, next to last sentence: More information is need to support this statement. **RL**			

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	126. Page 119, Section 4.2: There is some indication as to how one of the two or three analytical levels presented in Table 4-1 will be selected before performance of the analysis. The rationale for selection should be given for each task. **HAZWRAP** 127. Page 119, Section 4.2.1, P. 1, second to last sentence: This sentence states that "Complete analysis will be conducted on selected composited samples for TCL constituents and radionuclides." How will the compositing be accomplished (NOTE: Subsurface samples for VOAs should not be composited), and how will the samples be selected? The work plan should explain the why, what, where, and when; the Sampling and Analysis Plan should explain how. The mechanism by which the samples will be obtained should be indicated in the work plan. **HAZWRAP,RL** 128. Page 119, Sec. 4.2.1, P. 1: Source Characterization includes the borings that will be temporarily capped, Task 2 of the SAP indicates that the borings will be grouted and Task 4 of the SAP indicates that the borings will be re-entered through existing surface casing with no reference to temporarily capped wells. The method of capping has not been addressed. **IT** 129. Page 119, Sec 4.2.1, P. 1: When samples are taken down to only 20 to 25 feet, it would be a good idea to also take biological samples for bacteria, molds, etc.. Perhaps a solution to some of the problems is already in place in the form of these organisms. There may be some application of this process to groundwater also. **RL**			

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	130. Page 119, Sec 4.2.1, last P.: This paragraph indicates that analyses for TCL constituents will be performed only if field screening indicates the presence of radionuclides. This assumes that there is a relatively high correspondence between the presence of TCL constituents and the presence of radionuclides. If this is not the case, some TCL constituents may not be detected. **NUS** 131. Page 120, Section 4.2.2.2, P. 1: If horizontal spreading of contaminants is that important and is a part of the investigation in the vadose zone, then why are we not performing at least some continuous split spoon samples for stratigraphic determination down to bedrock up front in the field investigation? We do not have to perform many of these, but some, along with the other subtasks specified, will aid in site characterization. The gamma, gamma-gamma, and neutron logs will aid in the perched conditions determination. In fact, if not already known from previous work, the stratigraphy determination subtask should be accomplished first. This information will help "fine tune" all subsequent tasks. **HAZWRAP** 132. Page 121, Section 4.2.3.2, P. 1, first sentence: It is recommended that the word "additional" be eliminated. Additional is used again to describe the next three wells installed in paragraph 3. **HAZWRAP** 133. Page 121, Sec. 4.2.3.2, P. 1, line 3: Editorial, change "53-35 well" to "well 53-35". **RL**			

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	134. Page 121, Sec. 4.2.3.2, Unconfined Aquifer: This discussion needs a figure or figures showing existing and proposed wells along with the other pertinent information such as basalt outcrops, potentiometric surface(s) and relevant plumes to assess the adequacy of the proposed wells. Where are the three wells located that are listed here? **RL,NUS** 135. Page 121, 4.2.3.2, Confined Aquifer. This discussion needs a figure or figures showing existing and proposed wells along with the other pertinent information such as basalt outcrops, potentiometric surface(s) and relevant plumes to assess the adequacy of the proposed wells. **RL** 136. Page 121, Sec. 4.2.3.2, P. 2: The statement is made that the 3 downgradient wells will be located based on initial sampling and the seismic refraction survey. The discussion on Page 124 indicates that the seismic study is not definitely planned. If the survey is not run how will the downgradient wells be located? **IT** 137. Page 122, Sec. 4.2.5: What is the rationale for not including Ru-106, Co-60 and Tc-99 in the RI characterization task? **NUS**			

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	138. Page 123, P. 3: The statement "This location is also appropriate as remedial action may be conducted along the front edge of the plume" has not been justified at this point of the RI/FS/ROD process. This concept was used at early remediations of the Rocky Mtn Arsenal, however, 1988 and forward fixes will be in the plume and not down gradient. The sentence should be rewritten to say "This location may be a potential site for the groundwater remediation alternative to be screened during the FS process." **IT** 139. Page 124, Sec. 4.2.7.4, last P.: Previous seismic refraction surveys at Hanford have not been terribly successful at defining the top of basalt. Why is it assumed that this technique will work this time? **IT** 140. Page 125, Section 5.0: As indicated in Chapt. 3 of the 1985 guidance, the tasks described in this chapter should provide assurance that the sum of the existing and new data will form a data base sufficient for satisfying the input requirements for all engineering, statistical, and modeling calculations to be performed, including any computer programs that may be used. **NUS** 141. Page 125, Section 5.1, last paragraph: It is suggested that the paragraph be titled something to the affect of "Prerequisite Requirements." This paragraph seems to address project requirements of an operational nature. It does not seem to fit under Phase 1 Remedial Investigations wherein the 14 tasks are outlined. **HAZWRAP**			

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	142. Also, the QA plan is applicable to site activities just as the health and safety plan is, therefore, it should be added to the fourth sentence. **HAZWRAP** 143. Page 125, Section 5.1: The introduction defining how samples are screened is confusing. It would appear that field scanning is needed first. What is the system to track samples, etc.? (Should the management appendix be referenced here?) Are the specific laboratories on-site and off-site identified? What assurance exists that the specific procedures of this plan are followed? (How is it guaranteed?) **HAZWRAP** 144. Page 128, Section 5.1.1, P. 2: The purpose of the task is too narrow for the magnitude of the project. **HAZWRAP** 145. The purpose of project management is to manage the project to stay within cost, on schedule., and with acceptable technical performance, that is, to meet project objectives. **HAZWRAP** 146. Page 128, Section 5.1.1: It is recommended that project management not be defined as a specific task but be included as a separate section to the work plan to document how the project will be managed. The project management organization is the mechanism through which the RI/FS-specific tasks are to be accomplished. **HAZWRAP**			

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	147. Page 128: In the last paragraph, why is the 600 Area singled out? **HAZWRAP** 148. Page 128 Section 5.1.1.5 Meetings: Obviously you are discussing more than one type of meeting. This section should describe in more detail the meeting types (public versus with DOE) and the frequency of occurrence. **IT** 149. Page 129, Section 5.1: The "composition of the samples" does not appear to be described as it is in the first paragraph of Sect. 5.1.2. **HAZWRAP** 150. Page 129, Sec. 5.1.2, P. 2: Drilling through the top of cribs represents a challenging drilling operation, how will the holes be drilled? **IT** 151. Page 129, Last P: Add appropriate english unit after 100 meters for consistency. **RL** 152. Pages 130-131, Section 5.1: Figures 5-1 and 5-2 appear to be for Task 2 instead of Task 1. **HAZWRAP** 153. Page 132: What are the facilities identified in the last paragraph? How does the new DOE Order 5400 affect "in-house" work? **HAZWRAP**			

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	154. The three 600 Area borings are not shown on any figure. **HAZWRAP** 155. Page 134, Sec 5.1.3.1: These scintillation surveys should be referenced to standard procedures. **RL** 156. Page 134, Section 5.1.2, last paragraph: Is there a procedure to be referenced for "archiving" samples? **HAZWRAP** 157. Page 135, Sec. 5.1.3.3: Subsurface scintillation surveys should be conducted in accordance with approved procedures. **RL** 158. Page 135, Section 5.1.3.2: Should the tank or tank farm be included? Are there transfer lines from the IT tanks part of this? **HAZWRAP** 159. Page 135, Sec 5.1.3.2: The soil gas sampling method to detect leaks in the effluent transfer lines is based on the presumption that the systems can be isolated and pressurized. There are no alternative methods of testing should this presumption be invalid. **NUS**			

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	160. Page 137, P. 1: The sensitivity of the probe reading through the steel soil probe also needs to be tested. Bosch electric hammers have been used to drive soil gas access tubes into the ground 1.8 to 2.4 meters. **IT** 161. Page 137, Sections 5.1.3.4 and 5.1.3.5: "Elevated" and "highest" need to be quantified. **HAZWRAP** 162. Page 137, Sec. 5.1.3.6: Approximately 3 cubic feet of soil is generated in an 8 inch auger hole to 8 feet depth. Grouting the holes will require at least the same amount of grout. Back filling the holes with cuttings to within 2 feet of the surface and a 2 foot grout plug will provide the same end result and decrease waste and associated disposal costs. **IT** 163. Page 138, Section 5.1.4, P. 2: The WAC (?) document needs to be defined by title and number. Who drills the holes, and how do you ensure that they use this document? **HAZWRAP** 164. Page 138 Section 5.1.4: You state that prior to implementation of drilling activities, a re-evaluation of drilling techniques will be conducted. Who will be responsible for conducting this evaluation? Who will have input into the evaluation process, and ultimately, who will be responsible for the final decision? Will there be any review and input into this decision making process? IT			

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	165. Page 139, Section 5.1.4, last paragraph: Because there is a very long time from the start to the end of the RI/FS, it may be wise to hold "proper abandonment" until late in the project. **HAZWRAP** 166. Sections 5.1.5 and 5.1.6: Specific purpose should be provided. **HAZWRAP** 167. Page 139, P. 4: General Comment This survey can provide valuable data if it works. Similar studies in similar media (unconsolidated sands and gravels over indurated media with a paleosurface) were not successful in determining the presence of paleotopographic features. The results of the survey should be verified with at least one boring into a paleo-low as determined by the survey. **IT** 168. Page 140, Sec. 5.1.6: A basic premise to groundwater monitoring plan seems to be use of existing wells. What is planned to verify whether existing wells can in fact be used? **IT** 169. Page 140, Section 5.1.6: The two existing wells addressed on Figure 2-2 apply here too. **HAZWRAP**			

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	170. Page 140, Sec. 5.1.6, Task 6-Installation of Monitoring Wells: Suggest additional objective of obtaining hydraulic, chemical and geologic data to be used in predictive modelling studies to assess remediation alternatives, site characterization and predictive health risk assessment. **RL** 171. Page 140, P. 5: add another objective: Determine the surface elevations of the uppermost basalt stratum. These wells will provide additional data on the surface of the uppermost basalt as they will be drilled and completed 2 meters into the basalt. **IT** 172. Page 142: Consideration should be given to designing and constructing new boreholes to specifications suitable for use as pumping and/or injection wells for remediation activities. **RL** 173. Page 142, Section 5.1.6, general comment: Although cable tool drilling is an effective way of drilling, a general comment from the Hazardous Waste Remedial Actions Program is that its' effectiveness does not justify its use considering the fact that it takes approximately four times as long to complete a well and most drillers will charge for well completion by the hour, making cable tool, in the long run, very expensive. Other methods have been proven to be just as effective. In this investigation, air rotary with advanced casing seems to be appropriate. **HAZWRAP,RL**			

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	174. Page 142 Section 5.1.6: Why are no cluster well sets planned to help determine vertical gradients as per objective number 5? **IT** 175. Page 145, Table 5-2: The objectives for wells 52-54, 52-57 and 55-55 are stated to be numbers 1,2,5 and 6, there are only 5 (five) objectives listed on page 140. **IT** 176. Page 146, P. 3: The construction described herein would monitor only the tops of the unconfined aquifer. Is there no need to monitor the bottom of the unconfined aquifer? Has consideration been given to designing the wells such that both the top and the bottom of the aquifer can be monitored in a single borehole (dual completion)? **RL** 177. Page 146, Section 5.1.6, P. 3: By inference, the description of your well construction procedures indicates that you will be installing stainless steel screens in excess of 30 ft. First, if you are planning to install screens in this length or greater, you should specify the rationale why the long lengths have been selected. Screen lengths this long are somewhat unusual. Normally long screen lengths are selected for general groundwater characteristic screening. They hold little value for defining contamination within specific horizons. **HAZWRAP** 178. Page 146, Section 5.1.6, general comment: Why have stainless steel wells been selected? These types of wells are very expensive, especially in the total lengths, screen lengths, and diameter you will be installing. The selection of long screen lengths usually precludes the selection of			

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	(178 cont.) stainless steel because the purpose of long screen lengths is not entirely compatible with the selection of stainless steel. It would be cheaper and just as effective to put in low carbon steel wells. The characteristics of low carbon steel in this hydrogeological environment would be similar to that of stainless steel. **HAZWRAP** 179. Page 147, Section 5.1.6, Table 5-8: The diagram does not show that the riser pipe will have a vented well cap. This should be included. **HAZWRAP** 180. Page 147, Fig. 5-8: There is no technical validity for the 6 inch pump support steel casing. This is just an additional cost both in terms of labor and materials. The pump can be secured by a well seal on the 4 inch or by welding to the 10 inch protective steel casing. Additionally, there is no discussion of materials and sizes for the pump, drop pipe, electrical wire and ancillary fittings. **IT** 181. Page 148 Section 5.1.6, P. 1: How can you make a comparison of samples from 52-57 and 55-55 taken at 25-foot depth intervals to vadose zone samples taken elsewhere in 200-BP-1 at 2.5-foot intervals? **IT** 182. You should specify what type of stainless steel you are planning to use (304, 316, etc.) and the schedule for that casing (5, 10, etc.). **HAZWRAP**			

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	183. Stainless steel centralizers are mandatory for wells that will be installed to these depths, however, the centralizers should not be placed within the screened interval itself but just above and below the screen and at 50-ft intervals along the riser length as measured from the bottom up. **HAZWRAP** 184. Page 148, Section 5.1.7, P. 1: You may want to specify in this paragraph that all groundwater samples will be obtained from dedicated systems as specified in a previous section of this document. However, the dedicated system previously specified was not delineated as to what the dedicated system would include, that is, purging and sampling capabilities or, just sampling capabilities. **HAZWRAP** 185. If samples are going to be filtered before preservation, it is recommended that in-line disposable filters be used. This would also require that a filter blank be run for each change in filter lot number. **HAZWRAP** 186. Page 148, Section 5.1.7: Is there a table of total samples that will be taken? How will existing and new well samples be integrated? **HAZWRAP**			

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	187. Page 148 Section 5.1.7: Consideration should be given to establishing a network (representative percentage of existing wells) of monitoring wells to be sampled quarterly to determine the seasonal variations which exist in the hydrogeologic system at this site. This would be important for designing any treatment-extraction system which may be needed for remediation. Also, Records of Decision (RODs) are not established, they are however, approved. **IT** 188. Pages 149-150: With only these wells identified, how are the BP-3, 7, 4, and burial grounds isolated as not contributing to the problems? **HAZWRAP** 189. Page 151 Section 5.1.7.1: What procedures will be followed to develop the methods for analysis of cyanide and ruthenium-106? Who will review and who ultimately has responsibility for approval of these methods? **IT** 190. Page 153, Method 2, detection: what is meant by the "@" symbol? **RL** 191. Page 154, Section 5.1.7.2, P. 1, first sentence: The first sentence specifies that groundwater samples will be obtained using standard procedures. What are these standard procedures? Please reference. **HAZWRAP**			

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	192. Page 154, Section 5.1.7.2, P. 1, fourth sentence: The sentence specifies that purged groundwater will be captured and properly disposed of depending on its quality. What is the method of disposal? Specify the methodology or reference where it can be found. How will the quality be determined in the field? This phrase suggests two disposal scenarios? What are they? Explain how they will be accomplished or provide a reference. **HAZWRAP,RL** 193. Page 154, Section 5.1.7.2, P. 2: This paragraph suggests that the new wells will be sampled after installation and then not again for another 6 months. To adequately characterize the groundwater from new wells, at least two sampling rounds (for statistical purposes, quality assurance (QA), and confirmation) should follow monitoring well installation. As a guideline, the first sampling round should occur 1 week after well installation and the second approximately 1 month later. These times can vary depending upon site-specific variations. **HAZWRAP** 194. Page 154, P. 2: It should be clearly stated that the wells will be sampled using the dedicated submersible in lieu of the RCRA TEGD recommendation of bailers or low volume pumping systems that have inert materials contacting the water. The use of the submersible pump is appropriate for the parameters listed on page 154 as bulleted items. **IT** 195. Page 156, Sec. 5.1.10: Use "rainwater" instead of "meteoric water" throughout this section. **RL**			

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	196. Pages 156-159, Task 11-Aquifer Tests: Delete references to "qualified hydrologists" as all work should be performed by qualified people. What criteria will be used to define "qualified"? **RL,IT** 197. Page 156, Section 5.1.10: Column leach tests are only going to give the researcher a "ball park" idea as to the propensity for contaminants to leach to groundwater because the original structure of the vadose zone (physical properties of the soil) have been destroyed during the construction of the test equipment. Therefore, the test is mainly going to assess the chemical affinities between contaminants and soil. The physical attributes of the relationship will not be determinable. **HAZWRAP** 198. Page 158, Section 5.1.11, P. 1: Because each new well must be developed before it is completed, it is suggested that Well Development Recovery Tests be performed on each of the new wells installed. This is accomplished at the conclusion of well development, that is, as the pump is shut off at the completion of well development. This test, much like a slug test, will give the hydrogeologist another "piece of the puzzle" or another bit of information that may be used in assessing the hydraulic properties of the aquifer. **HAZWRAP** 199. Page 158, Section 5.1.11: How will the slug testing be used? What if the test cannot be taken as described in the first paragraph on p. 158? (Is there need for a substitute method? What information is lost and how does it influence the data, etc.?) **HAZWRAP**			

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	200. Slug testing with extremely long screens will be somewhat difficult. It is recommended that both rising and falling head tests be conducted in these wells as opposed to just the rising head tests to provide additional information supporting the overall aquifer characteristic assessment and that these tests be performed twice for each well. **HAZWRAP** 201. It should be specified in this section that the rationale for the well development recovery tests, slug tests, step-drawdown test, and 24+-hour pump test is to develop a linear approach toward the final pump test. The purpose behind the linear approach is to provide a sequential, logical, and integrated aquifer characterization program in which the results of each type of test will add to the fine tuning of the next level of testing and aquifer characterization. **HAZWRAP** 202. Page 158, Sec 5.1.11: If groundwater is contaminated, consideration should be given to containing the pumped water in tanker trucks and disposing of it at an evaporator for one of the tank farms or at a suitable wastewater treatment facility. **NUS** 203. Page 158 Section 5.1.11 Aquifer Tests: Any water discharged onto the ground during the drawdown/recovery pump tests, must be well outside the zone of influence where the test is being conducted! Pre-slug test water level recording of .5 hour seems much too limited to ascertain any antecedent trends. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	204. Page 158, last sentence: Antecedent water trend data need be collected for a period long enough to predict accurately the trends of all monitored wells expected to be influenced by the test through the pumping and recovery period. To do this with confidence a period several times longer than the combined pumping period and recovery period for the slowest impacted well is generally necessary. HAZWRAP 205. Page 158, P. 4: General Comment on Slug Tests. The slug should be constructed with a volume larger than the sand pack of the sell. Slug tests in unconfined aquifers should be analyzed by the Rice and Bower method. Most other methods are for confined aquifers. IT 206. Page 159: Pre-drawdown/recovery monitoring of water levels should be conducted for a week--minimum. IT 207. Page 159. P. 2: This paragraph discusses the length of the pumping portion of the test, the recovery data generally generates better curves and this data should be collected until the water level reaches a level near the static pre-test conditions (95%) or 24 hours after the pump was stopped. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	208. Page 160 Section 5.1.12: I don't recommend doing sorption tests on anything less than an undisturbed sample of the geologic material. Sorption capacity of materials is not only affected by composition, but packing (porosity) also has a lot to do with how contaminants are partitioned. To gain useful information from these laboratory tests, only the undisturbed soil columns should be used. **IT** 209. Page 161, P. 1: Is continuous agitation a required method? It is likely that there would be significant differences between this methods results and those of a flow through test. **RL** 210. Page 161, P. 1: Another possible method to completely mix the soil and solvent is to place the bottle in an ultrasonic bath and sonicate the sample. This method prevents clay clumping which can occur in gentle agitation shakers. **IT** 211. Page 163 Section 5.1.13.2 Exposure Assessment: A manual which is currently under development by EPA should not be referenced. It is conceivably possible this document would not be ready for public distribution before the exposure assessment is completed at Hanford. **IT** 212. Page 165, P. 1: Define the term "surrounding ecological receptors". **RL**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	213. Page 165, Sec. 5.1.14: This should address the evaluation and use of existing data as well as all new data. **NUS** 214. Sections 5.2, 5.3, 5.4, and 5.5: The feasibility portions of the document needs much more information on what, who, and how the work will be accomplished. **HAZWRAP** 215. Page 166, Sec 5.2.1, P. 2: Risk assessment for non-human biota, "environment" has not really been addressed as implied here. **RL** 216. Pages 166 and 169: All references to Sections 3.5.1 and 3.5.2 should be changed to Sections 3.4.1 and 3.4.2 respectively. **HAZWRAP,NUS** 217. Page 167, Table 5-5: Section 4 of the RI report outline should include biota as a potentially contaminated medium, as indicated in Task 9 (page 155). **NUS** 218. Page 169, Section 5.2.5: The term "process options" should be qualified or examples presented to distinguish the screening evaluation for process options from the similar screening evaluation of alternatives. **HAZWRAP** 219. Page 172 and 179, Table 5-6, Table 5-8: The Executive Summary is missing. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	220. Page 173, Sec 5.3.1.1, P. 1, sentence 2: This statement is confusing, how can multiple media protect the environment? RL 221. Page 174, Sections 5.3.2.1 and 5.3.2.2: Please explain how these evaluations will be accomplished. RL 222. Page 180, P. 5: Water drawn from contaminated areas will possibly be considered hazardous waste by regulatory agencies, There needs to be a section addressing control/disposal of water pumped during these aquifer tests. RL 223. Page 187. Table 5-9: The Executive Summary is missing. Item 6, incorporate 2 subsections; 6.8 Acceptance 6.9 Summary of Comparisons Include also, Bibliography and Appendices. IT 224. Page 187, Table 5-9: The preliminary outline of the Phase III Feasibility Report omits the comparison among alternatives and presents a selection of remedial alternatives. The comparison analysis serves to "highlight the relative advantages and disadvantages of each alternative so that key trade offs can be identified." The selection of an alternative (remedy) is made by EPA after input from support agency reviews, public comment, Hanford Contractors and DOE. The selection of the remedy is not a portion of the FS process. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	225. Page 188 Schedule: This doesn't seem like an overly complicated site--rather simple in reality. Therefore, a 5 year time frame to complete the RI/FS seems outrageous! It also does not fit in the with the intent of SARA which was meant to streamline the process. Congress mandated deadlines to EPA for completions to speed up the process and many of the EPAs RI/FS's prior to SARA (1986) were less than 5 years for complicated sites. IT 226. Page 189, Figure 6-1: This schedule is too drawn out. EPA Superfund RI/FSs are about one half the proposed duration, PRP RI/FSs average about 18 months. This is one rather small site with only 9 cribs and three spills. The periods to conduct the FS portion is way over estimated with respect to the waste disposal at the 9 cribs. IT 227. Section 6.0, figure: For tasks 2A, 3A, 4A, 5A, 6B, 8A, 10A, 11A, and 12A, what is being prepared? **HAZWRAP** 228. Is there a report to be prepared for Tasks 7 and 13? **HAZWRAP** 229. Is there a work plan for RI tasks 9 and 13? **HAZWRAP** 230. The schedule shows Headquarters and regulatory review of the FS report. What about the RI report in III task 14? (In accordance with the EPA guidance, task 8 says: "the task ends when the last RI document is submitted to EPA.") **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	231. Page 189, Table 6-1, Project Schedule: I do not understand what has been included in subtasks 2A, 4A, and 6B. Each of these subtasks is 7.5 months long and comes under the heading of preparation. **HAZWRAP** 232. Why is Task 11 scheduled to occur 8 months after the completion of the monitoring wells? Should this be included as a task that is ongoing while the drilling crews are still in the field? **HAZWRAP** 233. Screening of selected alternatives call begin at the completion of Task 2 instead of at a time almost 2 years later. **HAZWRAP** 234. Page 189, Table 6-1, general comment: there are too many tasks that are linearly developed thereby increasing significantly the length of the schedule. Many of these tasks can begin much earlier than specified in this schedule. For example, the Phase II RI does not occur for almost 18 months after the fourth groundwater sampling round. There are numerous other instances of this linear planning. **HAZWRAP** 235. Page 190, Section 7.0: It is not clear which documents are being invoked at the work plan level. All the documents were not referenced in the text, therefore, this section appears to be a list of works on a specific subject (a bibliography). **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	236. It is recommended for all the plans that (1) the reference section contain only the documents being invoked for developing the work plan and (2) the references be numbered and identified in the text by that reference number when appropriate. It is not clear which document is being referenced in the text, for example, p. 5, paragraph 1, first sentence and p. 76, last paragraph. These are important references that should be clearly identified as sources of requirements/guidances. **HAZWRAP** 237. Page 194 Section 7 References: Reference (EPA, 1988a) has the wrong OSWER directive number. It should be 9355.3-01 Reference (EPA, 1988b) is also cited wrong. It should be OSWER directive 9283.1-02. Reference (EPA, 1988c) cited in text is not listed. **IT** Volume 2 Sampling and Analysis Plan 238. Page 1, P. 1: The 200 BP-1 unit is in the <u>northwestern</u> portion of 200 E Area. Volume 2 Field Sampling Plan 239. General: The importance of the EII documents is such that they really should be available for reference. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	240. General: The tasks that discuss borehole drilling and monitor well sampling should address the handling and disposal of cuttings. **NUS** 241. General: There is nothing in the document that specifies how the contaminated water or soils are to be handled, what are the criteria for establishing contamination, and are any screening methods to be used to help delineate the contaminated materials. In general, on hazardous waste sites, if you do not know if the material is contaminated you must assume that it is until the analytical results prove otherwise. **HAZWRAP** 242. Generally speaking, the plan covers all the aspects it is supposed to. It breaks down, however, when it comes to the "meat and guts". Actual procedures are either vague and not specific or a WHC manual is cited for procedures. While it is appropriate to cite such a document for reference, if it is cited, it must be incorporated as an attachment or appendix. How can the regulatory agencies give approval for procedures which aren't part of the document they review? Also, by definition, The Work Plan is an all encompassing document. The procedures to be followed in the field must be part of it, not filed away in some office somewhere on site. The plan must be very "how" oriented so there are no questions raised once field work begins. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	243. General: The Sampling and Analysis Plan with references should be a document of sufficient detail that it could be given to any inexperienced technician and he/she could, if asked, complete a particular task as well as an experienced technician. This not only applies to technical tasks, but also to QA, QC, and administrative procedures as well, for example, filling out the site log book, chain-of-custody control, etc. **HAZWRAP** 244. Approval Page: Don't DOE and EPA need to sign this plan also? **IT** 245. General: Copies of the forms to be used for various field activities such as logging, sampling and chain-of-custody should be included for reference. **IT** 246. Page 2, Section 2.1: Change Reservation to Site **IT** 247. Page 2, Section 2.2.1, line 8: groundwater from wells in (and around) the 200-BP-1. **IT** 248. Page 4, Section 2.2.4: Referenced document WHC EII 5.2 should be incorporated into work plan for easy reference. **IT** 249. Page 4, Sec. 2.2.4, P. 1: The language in this section is too vague, specific standards should be referenced to assure traceable work is done. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	250. Page 4, Sect. 2.2.4, P. 1: This paragraph describes the equipment that will be used in collecting the vadose zone materials within the cribs. In the Work Plan, the sampling description mentioned stainless steel liners used in the core tubes. This is not mentioned here. **HAZWRAP** 251. Page 5, Figure 2-1: Remove A, A′ cross-section line. **IT** 252. Page 6, Figure 2-2: See figure 5-2 (Vol. 1). **IT** 253. Page 7, Section 2.2.4, P. 1: It specifies in the first sentence that the borings will be capped and sealed with the outer wall remaining in place, but it does not specify how this will be accomplished. A methodology or a reference is needed. **HAZWRAP** 254. Page 7, P. 2: It is unclear whether the hole is cased or not. Geophysical logging is more definitive if the holes are uncased. **IT** 255. Page 8, 2.3.1, line 2: Change Several to "Three". **IT**			

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	256. Page 8, Section 2.2.6, P. 3: First, volatile organic samples (i.e., all "GS" samples) should not be composited. Second, if volatile organic samples are to be collected, they should be collected using liners. The liner itself should be sealed and sent to the Contract Laboratory Program laboratory for analysis. **HAZWRAP** 257. Page 9, Table 2-2: Define what "o" means. Change the location of this table (2-2) and place after Figure 2-3, as per text location. IT 258. Page 13, Section 2.3.3: What kind of grid is to be used? Five foot centers, 10 foot centers? How many soil samples with elevated radiation levels from each anomaly (The two highest, the five highest)? IT 259. Page 13, 2.3.3, line 2 and 2nd paragraph line 3 and 5: Area should be reserved for the DOE titles for the 200 Area, 600 Area, etc.. IT 260. Page 13, Section 2.3.4: Radiation Land Survey, how will this survey be conducted? IT. 261. Page 15, Underground Distribution System Leak Detection: Again, procedures need to be developed to implement this task, how is this to be accomplished? Who reviews, who approves it, etc.? IT			

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	262. Page 15, paragraph 4, line 3: Make 2 to 2.5 meters (6 to 8 feet) the same through this paragraph and paragraph 5, line 1, paragraph 5 lines 1 and 4. IT 263. Page 16, Soil Sampling: Again, WHC EII 5.2 needs to be incorporated into the work plan. IT 264. Page 16, Geodetic Control: Define what "third order" precision and accuracy is. IT 265. Page 16, Section 2.3.6 Sample Handling and Analysis: The definition of significant radiation is not a judgment call to be made on site by the RPT. It should be a predetermined level agreed upon by all parties, i.e. DOE, state and EPA reps. IT 266. Page 16, P. 5: <u>Significant</u> radiation is not defined. There needs to be an action level specified so that the drilling and sampling crews know when to take the appropriate action. IT 267. Page 16, Section 2.3.6, 1st. paragraph, line 6: Try ....., "scanned for alpha, beta, and gamma and placed in labeled containers. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	268. Page 16, Sec. 2.3.6: The frequency of travel method blanks and procedural blanks is stated as percents of other samples. Normally, these blanks are based on sampling event characteristics and the need for travel blanks to accompany groups of samples. **HAZWRAP** 269. Page 17, Section 2.4.1, (3), (3): Is lixiviants a trademark or registered name? If so add the proper symbol. **IT** 270. Page 17, Section 2.4.3, first line: Try -- Existing boreholes constructed during Task 2, which were drilled through ..... 216-B-57 will be deepened ..... **IT** 271. Page 17, Section 2.4.3: Requirements of WAC 173-160 need to be spelled out. **IT** 272. Page 18, 1st paragraph, line 5: .....interval in each boring, unless a stratigraphic change is noted by the driller or geologist, at which time additional samples will be collected. **IT** 273. Page 18, Section 2.4.4: Referenced WHC documents need to be incorporated into the Work Plan. **IT** 274. Page 19, Section 2.4.6: What classification system is being used to log the geologic materials? **IT**			

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	275. Page 19, Section 2.4.7: Who's doing the geodetic survey and how? IT 276. Page 20, Section 2.4.8: Define the abandonment requirements of Chapter 173-160 WAC. IT 277. Page 20, P. 3: General Comment. The usefulness of the seismic survey will be determined at the 200 BP-1 area for use at subsequent sites. Using this technique to define paleotopography underlying 50 ft of sands and gravels at Rocky Mtn Arsenal proved to be useless. The geophysical lows were either highs or lows when drilled. IT 278. Page 21, Section 2.5.3: If the single shell tanks in the 241-BY Tank Farm are so fragile so as to the raise a concern during the seismic survey, maybe an Interim Response Action ought to be considered to alleviate the possibility of rupture. IT 279. Page 21, Section 2.5.3: It appears that no seismic work will be done at or around the 200-BP-1 operable unit. IT 280. Page 21, Section 2.6.1, 3): change "onto" to "into" and change "in" to "via". IT 281. Page 23, Section 2.6.3, line 7: Add .... intervals "or major stratigraphic change"..... IT			

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	282. Page 23, Sec. 2.6.4: Have other techniques been ruled out? Top drive air rotary might prove to be much faster and more economical? IT 283. Page 27, P. 1: Are you in truth going to drill through the entire basalt sequence? IT 284. Page 27, P. 2: No method discussed for obtaining basalt samples. IT 285. Page 27, Sec. 2.6.9 P. 4: If you are not going to size the screen slot size until the formation grain size is determined, then the filter pack gradation should not be determined until that time. **HAZWRAP** 286. Page 27, P. 4, line 8: Add--"One meter of Bentonite pellets and then" the remainder..... IT 287. Page 27, P. 4: Screen slot size will depend on formation grain size. Will grain size analyses be done in the field on all drive samples? If so, is there a procedure that can be referenced? Filter pack material should be graded to account for formation grain size as well as screen slot size. The bentonite/grout mixture ratios are not discussed anywhere in this document.			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	(287 cont.) The well installation procedure does not mention the holding times (periods of time to allow the grout mixture to adequately set up before the next phase of well completion) that will need to be followed after grout placement. The procedure does not mention how the grout and filter pack material will be placed (gravity or tremie method). It is not clear that additional grout will be added to the borehole as the drive casing is removed to assure a good seal. **IT,HAZWRAP** 288. Page 27, 5th paragraph: remove 1st sentence or remove in paragraph 4, line 11, remove same sentence. **IT,HAZWRAP** 289. Page 27, Section 2.6.4: Incorporate referenced documents. Why only bailing for well development, has surge block been considered? You state, "...purged water will be captured and properly disposed of, depending on its quality." What are the proper disposal methods and what are the levels which would require these disposal methods? If the quality is okay, how will the purged water be handled? **IT** 290. Page 27, P. 5: First sentence of paragraph is repeated from the previous paragraph. Details on well development should be provided such as how it will be done and criteria for determining when development is sufficient. Has any thought been given to sampling the bottom of the aquifer in some wells to assess the possibility of "sinkers". **IT**			

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	291. Page 27, Section 2.7.4: RODs are approved, not established. IT 292. Figure 2-8: Nominal 6-inch support steel casing is a redundant feature. The pump will be supported by a sell seal in the 4-inch or by anchoring to the 10-inch protective steel casing. IT 293. Figure 2-8 mentions a grout seal at the bottom of the screen location upon which the screen will be set. This is not discussed in this paragraph. HAZWRAP 294. Page 29, P. 4: All sample material will be placed in jars. IT 295. Page 29, 2.6.5, line 3: change "10,000" to "1,000". Also define the "600 "Area". IT 296. Page 29: Last sentence on the page should read: Two wells were chosen for better representation of background levels. IT 297. Page 30, Section 2.7.1: The RI/FS will not begin until 1989! IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	298. Page 30, Section 2.7.2 Item 2: Field tests should be conducted on the wells to ascertain acceptability for monitoring. IT 299. Page 30, Sec. 2.7, General: Over 3 pages are devoted to development of Level V SAS methods and nothing is mentioned about how existing wells will be examined/evaluated to determine if they are acceptable for continued monitoring. A section should be added specifically explaining how these existing wells will be inspected and how an evaluation will be made as to their acceptability. IT 300. Page 31, P. 2: General Comment. Most of the RI/FS presentation does not have a lot of details until this discussion on cyanides. This discussion, in such detail, appears to be a red flag. Other important items are not addressed as well as the cyanide issue. IT 301. Page 31, 3rd paragraph, 1st line: Fix equations by subscripting the 6 and superscript the minus three, three minus signs would be best. IT 302. Page 31, 4th paragraph: Would like to see the formula for the breakdown by biodegradation of cyanide. IT 303. Page 33, 3rd paragraph, line 5: add ....Cobalt "and Iron" complexes..... IT			

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	304. Page 34, Section 2.7.4.2: Shouldn't turbidity be measured during purging also? IT 305. Page 34 Title of Section 2.7.4.4.: Change "Sampling" to "Sample". IT 306. Page 34, Section 2.7.4.4, line 8: Start sentence "Samples will be collected as per WHC _____ procedure manual and sent..... IT 307. Page 34, Sec 2.7.4.4: The text should state that wells will be sampled in order, beginning with the least contaminated and ending with the most contaminated in order to reduce the likelihood of cross-contamination. NUS 308. Page 34: You left out a description of the construction detail review of existing wells, activity. What criteria will be used to evaluate wells? IT 309. Page 36, P. 1: Should add sulfates and nitrates to complete the major inorganic salt analyses. Sulfates are presented in Table 3-1 and nitrate data is presented in Appendix D. IT 310. Page 36, Sec. 2.7.4.4, first full paragraph: (relating to samples containers) is confusing and perhaps contradictory. HAZWRAP			

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	311. Sec. 2.8.3: It is recommended that the heading be changed to "Requirements for Surveys and Maps" from "Precision Accuracy for Surveys and Maps." **HAZWRAP** 312. Page 37, Section 2.8.4: Procedures provided by contractors and subcontractors have to be approved and incorporated into the SAP. **IT** 313. Page 38, Section 2.8.5: Indelible pens should be used for field notes. **IT** 314. Page 38, Section 2.9: What about deer? **IT** 315. Page 41, Section 2.11.2: Groundwater from pump test must be discharged well outside the zone of influence of the test. **IT** 316. Page 42: Shouldn't the water quality assessment of the well be done prior to test planning? **IT** 317. Page 42, Section 2.11.4: One half hour of water level monitoring prior to the slug test may not be adequate to determine any antecedent trends. One full day of monitoring prior to the slug test is recommended. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	318. Page 43, P. 2: Sampling pumps are to be removed by a Smeal rig. A Smeal rig is a well service rig manufactured by the Smeal Company. This sentence should be rewritten to say that the sampling pumps will be removed by a "well service rig" or pulling unit in lieu of a Smeal Rig. **IT,RL** 319. Page 43, Section 2.11.4: Again, it is recommended that prior to commencement of the drawdown/recovery test that water levels be monitored for a minimum of 1 week. WHC EII 10.1 and 10.2 need to be incorporated into the work plan. **IT** 320. Page 44, Section 2.12.2: It is recommended that sorption test be performed on undisturbed samples to obtain more representative values of actual subsurface conditions. **IT** 321. Page 44, 2.12.2, list of wells: Well E33-33 is a confined well. **IT** 322. Page 44, last paragraph: How about also measuring changes in pH, hydraulic conductivity, and perhaps temperature. **IT** 323. Section 3.0, General: Is the detailed procedure for decontamination applicable to all decons, including rigs and tools? If not, what is the procedure for deconing rigs? **IT**			

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	324. Page 45, Sec. 2.13, Baseline Risk Assessment: The treatment of this complex task is very weak. No guidance or requirements are referenced. **HAZWRAP** 325. Sec. 2.14, Evaluation and Report: The treatment of this complex task is very weak. No guidance or requirements are referenced. **HAZWRAP** 326. Page 47, P. 4: Rinse water should only be used once, especially the final rinse. All rinses should be spray rinses. **IT** 327. Page 47, Section 3.0: How will the "deconned" sampling equipment be stored to prevent further contamination? EII 5.5 needs to be incorporated into the work plan. Any "additional radiological decontamination procedures" need to be specified and incorporated into the work plan. **IT** 328. Page 48, Section 4: All the WHC EII documents cited are missing from the references, as are Jones, 1978, Gee and Heller, 1985 and Gee, 1987. **IT**			

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	Volume 2 Quality Assurance Plan 329. The word "all" is used extensively in the QA Plan section. Suggest that the word be deleted since there will probably be some exceptions. **RL** 330. The verification, validation, and control of computer codes does not appear to be adequately addressed. Appendix I which addresses available codes uses the words "should" and not "shall" or "will". RL 331. The QA Plan section addresses the "Environmental QA Program Plan" (WHC-EP-215) which is in preparation. Based on a limited understanding of WHC-EP-215, it does not appear that RL-88-32 implements the requirement of DOE orders, including RL 5700.1A & 2A. Impact levels of RI/FS work are not included. Training and qualification of personnel do not appear to be addressed. RL 332. The document does not appear to address any precautions to be taken to assure that drilling, pumping and sampling in one area of interest does not contaminate or affect the ability to characterize other areas. RL			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	333. Recommend the addition of a document hierarchy that reflects documents that the RI/FS was prepared to satisfy and the lower level of implementing documents. What is the relationship or applicability of the "Federal Facility Agreement and Consent Decree", the "Action Plan", RI/FS guidance documents, DOE Orders, WHC and other contractor NQA-1 QA Programs, etc. In addition, a listing of project requirements is suggested (e.g. specific elements the project is committed to). **RL** 334. Recommend the development of a matrix that identifies requirements, where in the RI/FS the requirements are satisfied, and what procedures implement the requirements. **RL** 335. Recommend that the approval of the QA Plan be limited to one individual who is responsible for the document. If the list on the cover is necessary all but one should be reviewing and concurring. **RL** 336. General: References to various 1988 EPA documents as 1988a, 1988b, etc. are not consistent throughout the text and are not indicated in a similar fashion in Appendix B, References. **IT** 337. General: This document makes extensive reference to other documents (e.g., WHC-EP-0215, WHC-CM-7-7, etc.) The overall adequacy of the QAPP for this project is not readily assessed without review of these referenced documents. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	338. General: The QAPP would be improved if it addressed the handling of all QA records, including the control, access, storage and overall management of these records. **NUS** 339. Table of Contents: The plan specifies control in accordance with a WHC document, WHC-EP-0215, "Environmental Quality Assurance Plan," which is not completed or available. The plan cannot be effectively commented upon without this critical document. The procedures invoked should be available for a complete review of the project. **HAZWRAP** 340. The QAPP should briefly discuss all referenced aspects of WHC-EP-0215 and WHC-cm-4-2, or else copies of the appropriate sections of these procedures should be included as an attachment to the work plan. **NUS** 341. The date the document is expected to be issued should be indicated. **HAZWRAP** 342. The programmatic requirements for control of field activities are addressed; however, how certain controls will be accomplished cannot be commented upon without the applicable procedure(s). **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	343. General: The QA plan should give some guidance regarding classifying project documents as QA records. It is not clear how records will be classified except as primary and secondary as specified in the project management plan. For example, will the summary report specified in Sect. 12.0 be specified as a QA record? **HAZWRAP** 344. Page 1, Sec. 1.1, sent. 3: should read "volatile and non-volatile organic contaminants..." **IT** 345. Page 1, Sec, 1.3: It is suggested that the purpose of the QAPP be expanded to indicate that it establishes the control requirements for the project to ensure quality of the data. The QA plan should also include the DOE control requirements (NQA-1) considered applicable to controlling the project management of the project. For example, test control is not indicated in the QA plan as a control element; however, tests are called out in the sampling plan (pp. 31 and 39). **HAZWRAP** 346. Page 1, Section 1.4: Need to provide procedure for update and modifications to include: 1. Schedule within context of tasks for review and update/modification 2. Flow chart for reviewers or list of appropriate reviewers 3. Nomenclature for revisions, (e.g., each revision is numbered sequentially or only reviews that change the QAPP are numbered). IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	347. Page 2, under QAP, Figure 1-1: Needs legend. Also high light the 200-BP-1 Operable Unit so it can be distinguished from the others. IT 348. Page 2, Sec. 1.3: "Current U.S. EPA guidance" should be defined. HAZWRAP 349. Page 3, Sec. 1.4, Task 7: This task indicates that redox potential will be determined. Requirements for these determinations should be include on Tables 4-1 and 7-1. IT 350. Page 3, Sec. 1.4, Task 9: If biota evaluations are to be made, then biotic survey procedures should be discussed in Sec. 4.0. IT 351. Page 3, Task 1: The elements necessary to ensure control of the project are not invoked in the plan. DOE invoked control elements (NQA-1) such as procurement control, shipping and handling, test control, document control, and auditing (project management) to name a few which appear to be applicable. The plan seems to be addressing only the work to be controlled in the field and at the laboratories. HAZWRAP 352. Page 3, Section 1.4: Selected tasks indicate work to be performed by "qualified" personnel--qualified needs definition for each discipline referred to, i.e., what determines qualified? IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	353. Page 4, Section 1.4: Task 13, Baseline Risk Assessment is not detailed, nor are there performance criteria. IT 354. Page 4, Sec. 2.1: It is not clear whether or not the quality-related personnel are defined in the referenced documents. If this is done in the Project Management Plan, it should be clearly stated as such. EPA QAMS-005/80, "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," requires identification of key individuals responsible for ensuring data quality. IT 355. Page 4, Sec. 2.1: The responsible WHC project element should be specified for approving all laboratory plans and analytical procedures. Specific information must be provided. HAZWRAP 356. Page 4, Section 2.1: Organizational chart for major elements should be included. Description of positions and responsibilities should be included. (Technical lead is often referred to, but their responsibilities, authorities, and organizational position is not known). IT 357. Page 4, Sec. 2.2: Radioactive screening needs to be detailed as to the type of instrument and radioactive particle. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	358. Page 5, Sec. 3.0: This section should describe objectives for representativeness and comparability in addition to the other data quality objectives discussed, as required by QAMS-005/80. IT 359. Page 5, Sec. 3.0: Nonconformance should be defined in Appendix A, Glossary. Data quality objectives should be included in the QAPP in Table 7-1. If referenced, then they should be in the appendix. IT 360. Page 5, Sec. 3.0, P. 2,3: Should refer to Table 7-1, not Figure 7-1. IT 361. Page 5, Sec. 3.0, P. 3: This paragraph states that precision and accuracy requirements of the EPA test methods used for analyses will be considered minimum requirements for this project. EPA methods cited are in SW-846. These methods do not contain precision/accuracy limits per se, rather the results of single laboratory analyses are presented for information. Generally these results would not be obtainable on a routine basis under conditions of varying analyte concentrations between samples. Other requirements for precision and accuracy should be cited. CLP Statement of Work documents and 40CFR136 may be referenced for guidance. IT 362. Page 6, Sec. 4.1, General: It is difficult to see how procedure control will work with so many different controls. Why can't all procedures be collected into one place for this effort? IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	363. Page 6, Sec. 4.1: Reference WHC-CM-7-7 does not agree with citation in Appendix B. IT 364. Page 6, Sec. 4.2: This section does not specifically address requirements for documentation related to sample collection and testing. The types of documentation required and the means for recording necessary data/information should be described or referenced as indicated in QAMS-005/80 and OSWER 9355.3-01. IT 365. Page 6, Sec. 4.2.1, General: In is not possible to evaluate whether procedures for soil sampling are adequate when they are no part of the plan. Referring to "Instructions" as controlling documents leaves the reviewer with no sense of comfort. Are the "Instructions" rigorously reviewed, controlled, etc.? Why not use "Procedures"? IT 366. Page 6, Sec. 4.2.2, General: How can groundwater sampling procedures simply be deferred to a subcontractor? Some guidance must be provided in this Work Plan. This comment applies to Sec. 4.3.1 through 4.3.5. IT 367. Page 6, Sec. 4.2.3: "Container codes" needs definition. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	368. Pages 7-9, Table 4-1: Title--insert "Preservatives" and "Maximum Holding Time", define "Container Preparation Code", footnote acronyms or abbreviations, e.g., R, CPM, Radionuclide CPM and disintegrations/minute is not consistent with units (millirems/hour) in screening as noted in Section 2.2. IT 369. Page 8, Table 4-1: This table should indicate that metals are exclusive of hexavalent chromium. In addition, cooling to 4^{0} C is not required for metals prior to analysis (see 40CFR136). IT 370. Pages 6, 10 and 11, Sec. 4.0, General Comment: Sampling and/or investigative procedures in Sections 4.2.1, 4.2.2, 4.2.3, 4.3.4, 4.3.6, 4.3.7, 4.3.8, 4.3.9, and 4.3.10 should be described in some degree of detail. Referring to detailed specifications and instructions in other documents is acceptable, provided those descriptions are appended to the QAPP. IT 371. Page 10, Sec. 4.3.1, 4.3.2, 4.3.3, and 4.3.5: These sections contain language indicating performance criteria shall be established by a contractor, e.g., "performed in compliance with approved subcontractor procedures...". Performance requirements should be established by the prime in the QAPP and passed down for contractor/subcontractor compliance. Alternatively, if specific contractual or technical reasons require the contractor to establish "approved" performance criteria and requirements, then the QAPP shall establish protocols for that approval, including appropriate reviews, documentation, and approval. IT			

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	372. Page 11, Sec. 4:0: Field documentation needs to be addressed, i.e., types of forms, information to be recorded, and frequency of completion. IT 373. Page 11, Sec. 5.1: This sections seems to say "Trust me. I have lots of procedures." Specifics need to be available to inspire the trust that is requested. IT 374. Page 11, Sec. 5.1: Specific chain of custody procedures should be defined in QAPP and should include conditions that define sample custody, procedures for change of custody, variables of documentation (i.e., personnel, company, time and date) during change, sample numbering, preservation and analysis. IT 375. Page 11, Sec. 5.0: Examples of chain of custody form and sample label should be included. IT 376. Page 12, Sec. 5.2: "Approved procedures" for radiation screening should be defined. IT 377. Page 12, Sec. 5.2: The sealing of core barrels that contain high (>5 millirem/hr) radioactive contents needs to be described as to materials and procedure. IT 378. Page 12, Sec. 6.0: References in text do not match those in Appendix B. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted)	Status
	379. Page 12, Sec. 6.0: Specific calibration requirements are discussed for organic and inorganic analyses only. Requirements should also be specified for the radiochemical analyses. IT 380. Page 14, Sect. 8.0, Data Reduction, Validation, and Reporting: It is stated here that the laboratory will perform all data validation. Normally, the laboratory does not have information on the identity of field QA samples and their relationship to regular samples. Without this information, total data validation is not possible. This should be reconciled as soon as the WHC-EP-0215 (containing data validation requirements) is available. **HAZWRAP** 381. Tables 4-1 and 7-1: TOC, nitrate and total phosphorous are listed as analytes in Table 4-1 but not in Table 7-1. Conversely, phosphate is listed in Table 7-1 but not in Table 4-1. IT 382. Table 7-1: The valence state of chromium should be indicated. IT 383. Table 7-1: Footnote 5 for Detection Limit (Water) for Inorganic analysis should be 4. IT 384. Table 7-1: Footnote 3 should be 5 for method 8270. IT			

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	385. Table 7-1: The description of this Table in the Table of Contents should state "Limit" not "Unit" and page numbers are not given. IT 386. Table 7-1: No method for either Fluoride or Phosphate analyses is given. IT 387. Table 7-1: The detection limit for mercury in water should be 0.0002 mg/L not 0.002 mg/L. IT 388. Page 14, Sec. 7.0: PARCC acronym requires definition. IT 389. Page 14, Sec. 7.0: Procedures for approval of contractor analytical laboratory should be established. IT 390. Page 14, Sec. 8.0: Procedures and calculations should be described. IT 391. Page 14, Sec 8.0: Reporting scheme and paths should be described and key individuals noted, or reference made to relevant organizational chart in Sec. 2.0. IT 392. Page 14, Sec. 8.0: Does not discuss data reduction procedures as required by QAMA-005/80. Methods for treating unacceptable data/outliers and data management procedures should also be presented or referenced in this section (See QAMS-005/80 and OSWER 9355.3-01). IT			

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	393. Page 14, Sec. 9.0: This should specify the minimum requirements to be met by subcontractor internal QC checks (e.g., WHC-EP-0215 requirements will be passed down to any subcontractors). IT 394. Page 14, Sec. 10.0: Requirements of the audit process should be described; if they are referenced, then they should be appended to the QAPP. IT 395. Page 14, Sec. 10.0: Qualified and certified auditors need to be defined. IT 396. Page 14, Sec. 14.0: Implementation of the performance and system audits should be addressed separately. IT 397. Page 22, Table 7-1: EPA SW-846, 1982, second edition is outdated and is superseded by the third edition. IT 398. Page 23, Sec. 10.0: The differences between a "nonconformance" and a "deviation" as discussed should be defined, and the terms included in Appendix A. IT 399. Page 23, Sec. 10.0: Periodic surveillance needs to be defined as to frequency or conditions that warrant its implementation. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	400. Page 23, Sec. 10.0: A schedule of maintenance for equipment used should be provided. IT 401. Page 23, Sec. 11.0: Maintenance responsibility should be noted. IT 402. Page 23, Sec. 11.0: A list of critical spare parts or required elements should be noted. IT 403. Page 23, Sec 12.0: It is not clear how the limitations and restrictions on data use will be implemented. IT 404. Page 24, Sec. 13.0: How will corrective actions that may be required as a result of activities other than audit/surveillance (e.g., routine review of data reports) be handled? IT 405. Page 24, Sec. 12.0: Specific procedures for statistically analyzing precision and accuracy should be noted. Equations should be included that define assumptions, variables, limits and uses. If plots are central to the process, then explanations on their construction should be provided. Limits of acceptability should be established that include a means for dealing with values outside of limits. These activities may be a part of validation efforts. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	406. Page 24, Sec. 12.0: Specific procedures for statistically analyzing precision and accuracy should be noted. Equations should be included that define assumptions, variables, limits and uses. If plots are central to the process, then explanations on their construction should be provided. Limits of acceptability should be established that include a means for dealing with values outside of limits. These activities may be a part of validation efforts. IT 407. Page 24, Sec 13.0: Details of the corrective action should be provided, or if referenced, then appended to the QAPP. The system for corrective action should be included, in addition to the action that identified the situation, the document that established the requirement that has been violated. In addition, the specific corrective action should be described and include a schedule of implementation; personnel responsible for its execution, personnel responsible for approval and a report on impacts to the project. IT 408. Page 24, Sec. 14.0: Section 4.4 referred to, does not exist in QAPP. IT 409. Page 24, Sec. 14.0: "Instruction Change Authorization" has not been defined. IT			

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	410. Page 24, Sec. 14.0: In addition to reports summarizing audits and similar activities, it should provide an assessment of the system for measurement of accuracy, precision, and completeness, and significant QA problems and recommendations to avoid future occurrences. The latter should address the entire Phase I operations and include analytical field and office activities. IT 411. General Comment: Records Management--A system should be presented on handling and storing records. Organization and personnel, custody, archiving, and storage conditions, and access control should be addressed. IT 412. General Comment: Procurement Control--The procurement of goods and services should be addressed. Methods of vendor and contractor qualification, competitive bid selection, quality assessment as to conformance to requirements or meeting minimum standards; review and control of supplies and documents; procedures and requirements for receiving and inspection; and procedures of nonconforming services and products should be described. IT 413. General Comment: Design and Analysis Verification--A procedure for determining verification of designs and calculations should be described. Drawings, logs, figures, tables, and arithmetic should be considered. Computer programs also require validation criteria. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	Volume 2 Health and Safety Plan 414. General: An example of the PJSP should be included as an appendix to this HASP. The PJSP is critical to the implementation of an effective safety program under this plan and is essential for complete understanding of this HASP. **IT** 415. General: A written description and map indicating the routes to emergency medical care must be included. This information allows for timely treatment of injured personnel. In addition, two hospitals should be specified to assure treatment under "worst-case" scenarios. **IT** 416. Sec. 1.0: Consideration should be given to a "Press Release" on this work, including its purpose and scope. **RL** 417. Page 1, Sec. 1.1, P. 2, add, "4. Discuss and have employees sign their understanding of procedures and Job Safety Analysis (JSA) **RL** 418. Page 1, Sec. 1.1, P. 3, add after mandatory "weekly". **RL** 419. Page 1, Sec. 1.1, P. 4, add a sentence on individuals rights and responsibilities for "Stop Work Authority in case of imminent hazards." **RL**			

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	420. Page 2, Sec. 1.2, P. 2, add a bullet on Confined Spaces. **RL** 421. Page 2, Sec. 1.2, P. 2, Bullet 4, add, "establish a daily work permit to be reviewed and approved by Management/Safety on the day before work is to be done. **RL** 422. Page 2, Sec. 1.2, P. 3, Bullet 1, add that when welding, painting or when inert gas cylinders are below grade and at 4 feet or lower, the area will be properly monitored as a confined space. **RL** 423. Page 2, Sec 1.2, Bullet 6: Field Team Leader responsibilities list does not specify the reporting or command relationship for the FTL. More specific information is needed. **IT** 424. Page 3, Sec. 1.2, P. 3, Bullets 4 and 5, delete "if or as necessary" **RL** 425. Page 3, Sec. 1.2, P. 4, Comment: Responsibility and authority for workers and projects health and safety is that of 1st line management. **RL** 426. Page 3, Sec. 1.3, P. 2: A discussion is needed that covers employees medical clearances, restrictions, occupational radiation exposures, etc.. **RL**			

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	427. Page 4, Sec. 1.4, P. 2: Inexperienced employees are required to be accompanied by an experienced employee for "three complete field procedures." The period of time associated with these repetitions should be specified. IT			
	428. Page 5, Sec. 2.1, P. 1, bullet 1: add, "safety eye wash and shovel". RL			
	429. Page 6, Sec. 2.1, P. 1, bullet 8: delete "and, if necessary" RL			
	430. Page 6, Sec. 2.1, P. 1, bullet 8: Hand/face contact prohibitions must include the eyes and nose as well as the mouth to provide sufficient protection from contaminant absorption/ingestion. IT			
	431. Page 6, Sec. 2.1, P. 1, bullet 12: Authority for appropriate level of protection must be specified (Site Safety Officer, HASP, RPT, etc.). IT			
	432. Page 6, Sec. 2.1, P. 1, bullet 13: define levels, i.e. B and C. RL			
	433. Page 6, Sec. 2.1, P. 1, bullet 16: Serious consideration should be given to use of a windsock at each site location. Then add, "as indicated by the windsock." RL			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	434. Page 6, Sec. 2.1, P. 1, bullet 18: Section of the HASP specifying confined space (trench) entry and operation procedures should be referenced. **IT** 435. Page 6, Sec. 2.1, P. 1, bullet 20: add "A 2-way radio will be provided and operating at each site location. The channel will provide communication to the fire department for emergency response." Controlled Zone has not been defined. **RL,IT** 436. Page 6, Sec. 2.1, P. 1, bullet 21: needed will be appropriate gloves, eye wash and drench equipment. **RL** 437. Page 7, Sec. 2.1, P. 1, bullet 22: not very good on manual lifting, be more specific i.e., add "when greater than 25 pounds and proper techniques will be used." **RL** 438. Page 7, Sec. 2.1, P. 1, bullet 25: change shout to, "talk in a normal voice" and add after hearing protection in line 8, "i.e., disposable foam ear plugs." **RL** 439. Page 7, Sec. 2.1, P. 1, bullet 26: spelling on radioactive **RL** 440. Page 7, Sec. 2.1, P. 1, bullet 28: add after adequately illuminated, "15 f/c on flat work surfaces." **RL**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	441. Page 7, Sec. 2.1, P. 1: add bullets 31 and 32. o Work will stop if any changes occur or unexpected events happen o Work will stop if any hazardous materials or radiation monitoring equipment is not on hand and working properly. **RL** 442. Page 7, Sec. 2.2: Common practice dictates the use of Confined Space Entry Permits when operations are to take place in any confined space. These permits assure special and appropriate care is exercised when operations must be performed in confined spaces. **IT** 443. Page 7-8, Sec. 2.2: The following items have not been discussed and need to be: o Submittal of nose wipes, whole body counting and urine samples for radiological analysis o Radiation monitoring equipment, oxygen meter, organic vapor meters and explosimeter need to be present. o P. 3: add ANS:Z117.1, "Safety requirements for working in tanks and other confined spaces and use of film . . ." o P. 5: add in a paragraph dealing with vehicles, operating at or near the site stating that they will be positioned so that Carbon Monoxide or other auto exhaust gases will not accumulate in the pit or trench. Each vehicle will be properly equipped for off road use, i.e., exhaust protection, shovel, fire extinquishers, etc.. **RL**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	444. Page 8, Sec. 3.1, P. 1: reference is needed to Table 3.2, List of Chemicals. Also in Table 3.2 is it not reasonable that other chemicals such as Trichlorethylene might be present? **RL** 445. Page 9, Figure 3-1: Needs legend. Also high light the 200-BP-1 Operable Unit so it can be distinguished from the others. **IT** 446. Page 18, Sec. 4.3, P. 1: A distance from the radiation source be specified? **RL** 447. Page 18, Sec. 4.3, P. 5: Monitoring for organic vapors is specified using HNU-PI-101 photoionization detectors is not appropriate to the detection of free cyanide specifically noted earlier in the paragraph. In addition, specific detector tubes are not effective in an environment with inadeluately characterized contaminants. Multiple toxic gas monitors (HCN, H_2S, etc.) or generalized detector tubes may be more appropriate to the detection of unknown reaction products. **IT** 448. Page 19, Sec. 5.0, P. 1: Two comments. This paragraph implies the RPT will be the only safety person on site full time, therefore, they will need increased knowledge of chemicals and monitoring, if not, then the safety officer and or health and safety personnel must be knowledgeable of chemicals and be there full time. **RL**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	449. Page 21, Sec. 5.4: An increased discussion is needed on the target organs, levels and health effects for the various radioactive isotopes. **RL** 450. Page 22, Sec. 6.1, item 5: The use of NBR gloves precludes the use of procedures stipulated in the Geologic Logging EII. These gloves greatly restrict manual inspections of consolidated or unconsolidated materials. If samples appear to be uncontaminated, then the use of two layers of latex gloves should be used if relative density field determinations are to be conducted. **IT** 451. Page 22, Sec. 6.1, D-2 Protection, item 1: SWPs are not defined as well as "rubbers or canvas "show" covers. Additionally, it appears that an individual will be wearing surgical gloves (item 1), NBR gloves (item 7) and inner gloves (item 8). These individuals will not be capable of recording information on paper while wearing three pairs of gloves. Generally, level D consists of latex and cotton for drillers/helpers/equipment operators and double latex for geologists/hydrogeologists. **IT** 452. Page 22, Sec. 6.1, D-2 Protection, item 5: Eye protection is required when slash hazard exists. Eye protection is required at all times for level D-3 protection; this item should require at least the protection called out in the lowered protection level. If the item is indented to require goggles when a splash hazard exists and safety glasses at all other times, the item should be rewritten to say so. **IT**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	453. Page 23, Sec. 6.1: In the listing of respiratory equipment for level B, for air line respiratory equipment, Grade E Breathing Air by cylinders or compressors will be provided. In addition, if on air equipment for IDLH or confined space then SCBA's are needed with back ups. RL 454. Page 23, Sec. 6.2: Heat stress sections needs to discuss the reentry or return to work time and approval if a worker is overcome. RL 455. Page 24, Sec. 7.0, P. 2: A discussion is needed and/or other means for workers to readily determine wind direction for command post, staging and decontamination areas. RL 456. Page 24, Sec. 8.0, P. 1: Add a section or wording on area shall be upwind. RL 457. Page 25, Sec. 8.2, P. 1: PCBs are discussed here as a possible contaminant, but they are not on the Table 3.2 list. RL 458. Page 25, Sec. 8.2, P. 3: Extensively contaminated equipment should be wrapped or bagged securely prior to transport to Building 2705-T to minimize the spread of contaminants beyond the Exclusion Zone. IT			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	459. Page 26, Sec. 8.4: A discussion is needed on the use of provided air cylinders and compressors for breathing air, SCBAs and of air purifying respirators. RL 460. Page 27, Sec. 9.0, P. 1: Add a statement after safe area, "upwind as indicated by the wind direction indicator." RL 461. Page 28, Sec 9.3, P. 2: Add after ...Smoking, " lighters or matches.. are strictly prohibited...." RL 462. Page 29, Sec 9.3, item 4: Section 9.1 specifies notification of Hanford Patrol on radio channel 2, while this reference requires notification by relay through station 1, this notification procedure must be clarified and consistent. IT 463. Page 29, Sec. 9.4: This section must also discuss the loss of chemical and radiological monitoring equipment. If this happens all work stops and personnel are removed from the area. RL 464. Page 29, Sec. 9.4: "Protection Factor" has not been defined; "degree of protection" or similar phrase should be substituted. IT 465. Sec. 9: There is no discussion of Sanitation needs; i.e., restrooms RL			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	466. Page 29, Sec. 9.7, bullet 1: The typical period of flushing for the removal of contaminants from the eye(s) is at least 15 minutes. The statement "using large amounts of water " is not sufficient. **IT** 467. Page 30, Sec. 9.8: The order in which the emergency services and personnel are to be called must be specified to assure effective emergency communications. **IT** 468. Page 30, Sec. 9.8: There is a special form to report environmental releases, see attached. **RL** Volume 2 Community Relations Plan 469. Is the Hanford-wide community relations plan acceptable to regulatory personnel? The guidance supports a site (which would imply Operable unit for Hanford) level. How will schedules of specific events on community relation efforts fit into the overall RI/FS activity for 200-BP-1? **HAZWRAP**			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	Volume 2 Data Management Plan 470. The second sheet of Table 2-1 is missing; total review of this table could not be made. **HAZWRAP** 471. For completeness, the scheduled implementation of the computer-based Hanford Environmental Information System (HEIS) discussed in this section should be identified on the work plan schedule, Figure 6-1. The DPM could be improved by adding a discussion on the control, access, and overall management of the HEIS, as well as the other hard copy and/or computerized data systems that will be used until the HEIS is implemented. **NUS** Volume 2 Project Management Plan 472. Section 2, General: It is difficult to understand how the project will really be managed. For example: Which one person is in charge? If EPA Unit Manager is responsible for all activities, how does he direct the work of WHC? Contractually this seems to be a major problem. The description of the Technical Lead job places this position as "real" project manager.			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	(472 cont. In that much of the data gathering activity supports both the RI and the FS, it is not clear how the RI Coordinator and the FS Coordinator roles will be separated. **IT** 473. Suggest adding to Figure 2-1 (page 3 of Project Management Section) titled "Project Organization" the DOE-RL nomenclature for responsible organizations since the blocks as currently titled do not agree with RL terminology. **RL** 474. Page 2, second bullet: The wording is not compatible with the work plan terminology. For example, RI/FS Project Plans is used, but should this be RI/FS Work Plan? Also, the titles of the attached plans; should be used. The QA Plan and Field Sampling Plan make up the Sampling and Analysis Plan; therefore, this latter document should be indicated also. **HAZWRAP** 475. Page 3: The three staff positions above the technical lead block are not designated. The positions should be qualified, and the responsibilities should be included in the plan. **HAZWRAP** 476. The staff functions of QA, QC, Health and Safety, Project Control, and Procurement should be shown below the technical lead block for accuracy, and the responsibilities for these important control functions should be included in the plan.			

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Item	Comments(s)/Discrepancy(s) (Provide technical justification for the comment and detailed recommendation of the action required to correct/resolve the discrepancy/problem indicated).	Hold Point	Disposition (provide justification if NOT accepted).	Status
	(476 cont.) Because this is a project plan, it would seem appropriate to show the project organization in more detail. The responsibilities of the various team functions should be included because it is important to understand the responsibilities down to where the work is being accomplished. **HAZWRAP** 477. Page 12 appears twice; there is no p. 13. **HAZWRAP** 478. Page 15, Sect. 3.4: It is not clear if the administrative records will be QA records. In my view these records should be classified as QA records. **HAZWRAP** 479. Page 17, Sec 3.6, P. 2: Field changes should be approved by the QA Officer. **IT** 480. Page 19: The explanation of sound control requirements for cost/schedule control of the project and control of the project through timely project reviews by responsible project elements is excellent. **HAZWRAP**			

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	Appendix A - SOURCE INVENTORY 481. Page 1, Appendix A: The definitions of QA, Quality Assurance Project Plan (QAPP), and Quality Control (QC) are only directed at the control of data quality. Programmatic management activities that extend beyond obtaining data quality must also be controlled within the Department of Energy, Westinghouse-Hanford Corporation (WHC), and subcontractors to ensure project objectives are met. Moreover, as the project progresses to other remedial actions phases such as remedial design and remedial action, more of the programmatic control elements (NQA-1) should be invoked and tailored to the project requirements. **HAZWRAP** Appendix D 482. Page D-22: Plutonium-238 is not shown in the header block. **IT** 483. Page D-23: Plutonium-239/240 not shown in header block. **IT** 484. Page D-35: Technetium-99 not shown in header block. **IT** 485. Page D-45: Tritium not shown in header block. **IT** Appendix E 486. Change all "mg/L" to "ppm" for consistency with "ppb" **RL**			

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	Appendix I 487. Page I-1. Appendix I, P. 2: The office of primary responsibility for writing the procedure and the availability date should be included. Open requirements such as this one cannot be effectively controlled without specificity. **HAZWRAP** 488. Appendix I: There is no mention of software QA requirements in the project QA plan. Because software is critical to quality of the assessments and evaluations of waste management options, it should be indicated in the QA plan as another element to be controlled for ensuring quality. **HAZWRAP** 489. Editorial applying to all portions of the work plan and attachments: The numbering system of the document, and all future work plans should be such that ready reference, without duplication can be accomplished. Pages in Section one should be numbered 1-1 through 1-x, Section two 2-1 through 2-x and so forth. In the work plan proper, each section could be preceded by an acronym of the particular plan, i.e., FSP for Field Sampling Plan, SAP for Sampling and Analysis Plan, HSP for Health and Safety Plan. This would make reference considerably easier for both WHC and the reviewers. **IT,RL**			